1339-00001
(88080156)
Whittaker Corp-Bermite Division

SITE SCREENING ASSESSMENT

Prepared by:
California Department of Toxic Substances Control
Cooperative Agreement Number:
DTSC Fiscal Year: 2008-09

Prepared for:
United States Environmental Protection Agency
Region 9
States, Planning, and Assessment Office
San Francisco, California

Date: 5/19/09

Site Name: Former Whittaker-Bermite Facility
City: Santa Clarita
County: Los Angeles
EPA ID Number: CAD064573108
CADTSC Envirostor ID Number: 19281087
DTSC Regional Office: Chatsworth (3)

EXECUTIVE SUMMARY

Site Name:	**Former Whittaker Bermite Facility**
EPA ID Number:	**CAD064573108**
Envirostor ID:	
Site Screen	**YES:** ☐ **NO:** ☒
Site Reassessment	**YES:** ☒ **NO:** ☐

Findings and Recommendation:

Pre-Triage Recommendation					
Refer to: ☐ EPA ☒ CADTSC ☐ CARWQCB ☐ Local Agency					
FORWARD TO TRIAGE:	☐	Yes	☒	No	
Post-Triage Recommendation					
Refer to: ☐ EPA ☒ CADTSC ☐ CARWQCB ☐ Local Agency					

Final Signatures and Concurrence:

DTSC Screener:	_____	Jose Diaz Type Name	_____
DTSC Approval:	_____ Signature	Rita Kamat Type Name	_____ Date: (MM/DD/YYYY)
EPA Concurrence:	_____ Signature	Matt Mitguard Type Name	_____ Date: (MM/DD/YYYY)

SITE SCREENING ASSESSMENT (SSA)

Site Screening: ☐ \ **Site Reassessment:** ☒

Section 1: Site Information

1.1: Site Name: Former Whittaker Bermite Facility
Other Names: Bermite Facility

1.2: Origin of Site under assessment:

Discovery Project/Name:
or
Referral from other Agency/Name:
or
Complaint/ Name:
or
In CERCLIS (for Reassessments): CAD064573108

1.3: Site Location Information

Street Address: 22116 West Soledad Canyon Road

City: Santa Clarita **County:** Los Angeles

State: CA **Zip Code:** 91355

X **Latitude:** + 34 . 89520 **Longitude:** - 118 . 26462

Acres: 996

1.3 Regulatory Information:

CERCLIS? Yes **RCRA site?** Yes

SLIC site? No **LUFT site?** No

UST site? No **WIP site?** No

Landfill site? No **Local Agency site?** No

Envirostor ID: 19281087 **EPA ID:** CAD064573108

Geotracker ID: **Geotracker Case Number:**

Is the contamination petroleum related: No

Section 2: Operational History

Current owner: Santa Clarita LLC (SCLLC)/Remediation Financial Inc.(RFI)
Current operator: None
Hazardous materials used: None
Dates of operation: SCLLC/RFI purchased the property from Whittaker in 1999.

Historical owners/operators that may have used Hazardous Materials onsite:

Ownership History
The area was originally subdivided by Newhall Land & Farming Company and Los Angeles Home Company in 1912 and is comprised of three parcels. Parcel 1 is the northern portion of the Site that is currently occupied by the commuter rail station. Parcel 2 is the southern, roughly square-shaped area of the property. Parcel 3 is the western portion of the Bermite facility. Previous owners included Los Angeles Powder Company from 1934 to 1936, Halifax Explosives Company from 1936 to 1942, E. P. Halliburton, Inc., in 1942, Bermite Powder Company from 1942 to October 1967, Whittaker Corporation from 1967 to 1999, and Santa Clarita LLC from 1999 to the present. All of these companies, with the exception of Santa Clarita LLC, utilized the facility for production of munitions and explosives, including dynamite, fireworks, oilfield explosives, and photoflash devices.

Early History and Use
During most of the early history, manufacturing was restricted to the northern portion of the property and through time the plant expanded toward the southeast and into the central portion of the property. From 1934 to 1936, the Bermite facility was used to manufacture dynamite under the ownership of L.A. Powder Company. Historical information indicates that the Halifax Explosives Company manufactured fireworks at the Bermite facility from 1936 to 1942. In 1939, Golden State Fireworks made fireworks at the Bermite facility. In 1942, E.P. Halliburton reportedly manufactured oil field explosives. Production by the Bermite Powder Company was carried out from 1942 to 1967. Between 1942 and 1953, Bermite Powder Company produced a more limited line of products that included flares, photoflash devices for battlefield illumination, and other explosives. The "Bermite" name was applied to a blasting product made from a mixture of the high explosives trinitrotoluene (TNT) and cyclonite (RDX). Neither constituent was synthesized on Site but, rather, was purchased as a raw material. From 1953 to 1967, production consisted primarily of detonators, fuses, boosters, coated magnesium, and stabilized red phosphorus.

Whittaker History and Use
Between 1967 and 1987, under Whittaker ownership, the Bermite facility manufactured various products in the general categories described below. The overall operation/production at the Bermite facility was dependent on contract orders. These orders affected the number of employees, number of buildings needed, turnover of building usage, chemicals used, and waste by-products generated. Some of the products listed below were produced in small quantities on an as-needed basis, while others were mass-produced as a result of large defense contracts. Other products remained in research and development stages.

Ammunition Rounds - These are small caliber cannon shells (also called cartridges).Each cartridge is made of a head, a casing, and the propellant. The cartridges, mostly in the 20-

millimeter (mm) and 30-mm sizes, were loaded with gun propellant and assembled at the Bermite facility.

Detonators, Fuses, and Booster - These are devices that initiate the main charge of an explosive. They contain small amounts of sensitive high explosive. When detonated by an electric or flame source, they send a shock wave into the main charge, causing it, in turn, to explode.

Flares and Signal Cartridges - These products provide a light, heat, or visual source. Military applications included infrared decoy flares, battlefield-illumination, smoke generators for signal cartridges, and training versions of missile and artillery main charges. Flares and signal cartridges were two of the primary products produced at the Bermite facility during recent history. Product lines in this category included the Mark 4 signal cartridge, and the W-9 and W-17 practice missile main charges ("dummies").

Glow Plugs and Tracer and Pyrophoric Pellets - These are components of tracer bullets or shells, including the 23-mm tracer pellet.

Igniters, Ignition Compositions, and Explosive Bolts - Igniters and ignition compositions provide a source of high temperature flame to ignite the solid propellant in a rocket motor or a gas generator. Explosive bolts are used to quickly and positively separate individual components, such as is required in rocket staging. A major product line in this category was the igniter for the Mk 47 torpedo gas generator. Other products included the BP-1, Mk 125, and Mk 192 igniters.

Powder Charges - These products are non-military explosives used in oil field development. Products included the Baker #420 and Baker Oil Tool charges.

Rocket Motors and Gas Generator - Rocket motors are propulsion devices that use a burning solid propellant grain to generate thrust. Rocket motors were a major product line at the Bermite facility and included the JATO, Sidewinder, and Chaparral rocket motors. Gas generators are similar, but the combustion gases are used instead for guidance control or to spin turbines for power generation.

Missile Main Charge - The missile main charge is the high explosive component in a missile or artillery shell. The missile main charges for the Sidewinder and Chaparral missile were received prepackaged from an off-site source and assembled at the Bermite facility. The process of installing the initiating device (i.e., the detonator) into the missile main charge was conducted at the Bermite facility.

Section 3: Site Impact Information

What is the site setting: Urban
Details: The Bermite facility is located at 22116 West Soledad Canyon Road in Santa Clarita, California. The Site encompassing 996 acres and is situated in Township 4 North, Range 16 West, Sections 23, 24, 25, and 26 within the U.S. Geological Survey (USGS) 7.5-minute, Newhall, California topographic quadrangle (Newhall topographic map and Figure 1-1, Site Location Map). The Bermite facility is currently inactive with approximately 30 buildings formerly used for administration and/or storage remaining. Former process, manufacturing, and test facilities have been removed. Several security/maintenance personnel currently work at the Bermite facility. The Los Angeles Aqueduct transects the eastern portion of the property through an underground conveyance system. Producing oil fields are located approximately 0.5 mile southeast and 1.2 miles northwest of the Bermite facility. A commuter rail station has been built on an approximately ten acre parcel located in the northern area of the property along Soledad Canyon Road. The property is in the process of being marketed for development of a master-planned community including residential, commercial, retail, and may include light industrial components.

Land use surrounding the site: Mixed
Details: The land use surrounding the site is commerical/industrial surrounded with residential.

Are there residences within 200 feet: Yes
Details: There are residential homes within 200 feet

Are there schools/day care centers within 200 feet: No
Details: There are no schools located within 200 feet of the site, however there is a school located within 1/4 mile of this property.There are 8 schools located within 2 miles of this property.

Surface water within 2 miles of the site? Yes
Details: The Santa Clara River borders the northern perimeter of the property and the south fork of the Santa Clara river is within 1/4 of a mile to the western boundary of the property.

Are there any sensitive environments or wetlands within 2 miles of site: Yes
Details:

Is this site a source of contamination to surface water? Yes

Is surface water used for drinking water within 15 miles of the site? No

If yes, is the surface water used for public / commercial supply: No

If yes, is the surface water used for private supply: No

If yes, approximately how many people served by the surface water: Not Applicable

Details: The surface water of the Santa Clara River is not used for drinking water purposes.

Is groundwater used for drinking water within 4 miles of site? Yes

If yes, are the drinking wells public / commercial: Yes **or private** Yes

If yes approximately how many people served by the ground water: The wells located within 4 miles serve a total population of 258,659 residents.

Details: Castaic Lake Water Agency (CLWA) is a public water wholesaler that provides about half of the water that Santa Clarita households and businesses use. CLWA operates two treatment plants, two pump stations, two storage facilities, and over 17 miles of transmission pipelines. CLWA supplements local groundwater supplies with State Water Project water from northern California. This water is treated and delivered to the Santa Clarita Valley's four local water purveyors: Los Angeles County Water District #36, Newhall County Water District, Santa Clarita Water Division, and Valencia Water Company. There are 15 production wells within 4 miles of this site.

Is groundwater within 4 miles of the site known to be contaminated with hazardous substances: Yes

If yes, what hazardous substances: Perchlorate

If yes, do any of the levels exceed drinking water standards? Yes

Details: Perchlorate was detected above the MCLs

Is this site a source of ground water contamination? Yes
Details: Four production wells screened in the Saugus formation and two wells screened in the alluvium were shut down due to chemical impacts in 1997.

Any Community Involvement? Yes
Details: There is a Citizens Advisory Group (CAG) that holds quarterly meetings and CAG members attend Multi-Jurisdicational Task Force Meetings comprised of State and local elected officials and agencies.

Site Reconnaissance

1. **Date of visit:** Continuos
2. **Adjacent properties:**

   North Soledad Canyon Road; Santa Clara River, Commercial buildings and Metrolink Station
   South Residential
   East Golden Valley Road, Commercial, Residential and High School.
   West Industrial and commercial business and warehouse

3. **Structures onsite (e.g. Office Bldg, Paint Booth, Repair Shop etc.):** The Bermite facility is currently inactive with approximately 30 buildings formerly used for administration and/or storage remaining

4. **Any visual staining:** No.

5. **Any hazardous Materials storage onsite:** Yes. Chemicals and petroleum products associated with excavation equipment and vehicles, water treatment plant and soil vapor extraction systems.

6. **Specify any hazardous Materials used onsite:** See above

7. **Indicate if following are present onsite, specify volume, content and how many:**

a) **Drums:** Yes
b) **ASTs:** Were present in past. Mobile ASTs for fueling equipment.
c) **USTs:** Were present in the past.
d) **Clarifiers:** Were present in the past. It is unknown if all have been removed.
d) **Other:** unknown

8. **Any transformers containing PCBs?** No info, however PCB's were found in the soil.

9. **Any previous sampling results:** Investigations on the site have been ongoing since before 1990.

Chemical Impacts in Soils
The primary contaminants detected during the Site-wide Remedial Investigations are perchlorate and volatile organic compounds (VOCs) (primarily chlorinated hydrocarbons). The distribution and extent of perchlorate and VOC impacted soil extend beyond 200 feet in the subsurface and have impacted groundwater. Below is a summary of previous investigations as presented in the July 7, 2006 Site-Wide Remedial Investigation Report for Operable Units 2 through 6, prepared by CDM on behalf of the Whittaker Corporation and approved by DTSC.

Operable Unit 1
Remediation of chemically impacted soils in OU1 is underway through SVE for VOCs and ex-situ enhanced bioremediation for perchlorate. The excavation and ex-situ remediation operations for perchlorate impacts have been completed. In the areas of perchlorate impact,

soils were excavated to "practical depth of excavation" and treated. The deep soils not addressed by the OU1 FS, RAP, and RD (depths greater than 40 feet, except Area 55, where depths are greater than 70 feet due to the steep hill-side slope) are summarized herein: The results of the RI indicated that the deep soil in certain areas of OU1 has been impacted, primarily by perchlorate, and to a lesser degree, by VOCs. The areas with deep soil perchlorate impacts in OU1 include OU1E (Areas 7, 43, 55, and Building 329) and OU1Ds (Area 26). Area 7 had reported perchlorate concentrations up to 14,000 µg/kg (110 feet) with detectable concentrations extending to 110 feet; Area 26 had reported perchlorate concentrations up to 14,000 µg/kg (65 feet) with detectable concentrations extending to 190 feet; Area 43 had reported perchlorate concentrations up to 510µg/kg (200 feet) with detectable concentrations extending to 200 feet; Area 55 had reported perchlorate concentrations up to 19,000 µg/kg (80 feet) with detectable concentrations extending to 85 feet; Building 329 had reported perchlorate concentrations up to 1,400 µg/kg (50 feet) with detectable concentrations extending to 50 feet. Additionally, one boring drilled in the roadway north of Area 55 (OU1A-DB-03) had reported perchlorate concentrations up to 4,200 µg/kg (170 feet) with detectable concentrations extending to 200 feet. The areas with deep soil VOC impacts in OU1 include OU1E (Areas 7, 43, 55, and Building 329). Area 7 had reported trichloroethene (TCE) concentrations up to 1,800 µg/kg (110 feet) with detectable concentrations extending to 140 feet; Area 43 had reported TCE, tetrachloroethene (PCE), and cis-1,2-dichloroethene (cis-1,2-DCE) concentrations up to 780 µg/kg (200 feet), 6.3 µg/kg (200 feet), and 6.8 µg/kg (200 feet), respectively, with detectable concentrations extending to 200 feet; Area 55 had reported TCE concentrations up to 88 µg/kg (80 feet) with detectable concentrations extending to 110 feet; Building 329 had reported TCE and PCE concentrations up to 15 µg/kg (50 feet) and 5.4 µg/kg (50 feet), respectively, with detectable concentrations extending to 50 feet.

Operable Units 2 and 6

The results of the RI indicated that the soil in certain areas of OU2/OU6 has been impacted, primarily by perchlorate, and to a lesser degree, by VOCs. Almost all areas investigated had some degree of perchlorate impacts. Areas 1, 1AN, 1AS, 4, 6, 19, 22, 25, 27, 28, 34, 37, 54, 58, 72, and 74 had reported concentrations exceeding 500 µg/kg, and Areas 1AS, 22, 25, 27, 34, 37, 54, 58, 63, 72, and 74 had reported concentrations exceeding 5,000 µg/kg. All areas except Area 1AN had impacted soil to depths greater than 40 feet. Areas 1, 1AS, 25/34, and 74 had deep soils impacts likely extending beyond a depth of 200 feet, the vertical limit of the operable unit boundary. Several areas had some degree of VOC impacts. Areas 1, 1AN, 1AS, 4, 6, 9, 19, 27,28, 34, 36, 37, 53, 54, 56, 58, 63, and 72 all had total soil-gas VOC concentrations in excess of 1 µg/L, but only Areas 1, 1AS, 6, 19, 27, 34, 53, and 54 had total soil-gas VOC concentrations in excess of 10 µg/L. Areas 1 and 54 appear to be the areas that exhibit evidence of a significant source or release. In Area 1, TCE was detected at concentrations up to 240 µg/kg (soil-matrix) and 2,700 µg/L (soil-gas); and VOC impacts in Area 1 persist throughout the soil column and extend beyond a depth of 200 feet (the vertical boundary of the OU). Previous soil remediation operations for Area 1 included the excavation of between 50,000 and 60,000 cubic yards of soil to a depth of approximately 60 feet, followed by SVE operations from 1988 through 2002, during which approximately 40,000 pounds of VOCs were extracted and treated. In Area 54, PCE was detected at concentrations up to 110 µg/kg (soil-matrix) and 84 µg/L (soil-gas); TCE was detected at concentrations up to 280 µg/kg (soil-matrix) and 700 µg/L (soil-gas); and VOC impacts in Area 54 persist throughout the soil column and extend to a depth of approximately 120 feet. A soil vapor extraction (SVE) system performance test conducted in Area 1 (OU6) indicated that VOC concentrations were substantially reduced near the extraction wells after several days of operation. VOC

concentrations were observed to increase in several of the SVE probes further away from the extraction wells, likely due to the system drawing soil gas toward the extraction system. Metals concentrations exceeding the maximum Site background levels were encountered in every area sampled. In most cases, the exceedances were not significantly higher than the background levels, and may still represent natural conditions. Furthermore, the exceedances were generally sporadic, without a discernable pattern, represented a small percentage of the samples analyzed, and were not indicative of a specific release or source area. In the few cases where the concentrations appeared to be substantially higher than the background levels (Areas 3, 6, and 44), the occurrences were still limited in extent. Polynuclear aromatic hydrocarbons (PAHs) were detected in one soil sample collected from Area 27, and dioxins and furans were detected in eight samples collected from Area 3. In both cases, the impacts were limited in extent and do not appear represent a significant release or source area.

A small area of titanium tetrachloride ampoules was encountered during the RI in Area 9. These ampoules were excavated and taken off site for disposed in 2005. Up to nine feet of fill materials were identified in Area 37, which has been named the "Point Landfill". However, no debris or other evidence of landfill material was found in this area.

Operable Unit 3

The results of the RI indicated that the soil and bedrock in certain areas of OU3 have been impacted, primarily by perchlorate and VOCs. Perchlorate-impacted soil/bedrock was encountered in Areas 14 and 17. Area 14 is impacted by perchlorate, with concentrations as high as 316,000 µg/kg. Perchlorate concentrations exceeding 1,000 µg/kg persisted throughout the soil/bedrock column to the maximum depth sampled (200 feet) at three boring locations along the central axis of the valley. Perchlorate impacts in Area 17 were less, with the maximum concentration being 756 µg/kg, and the vertical extent limited to the upper 40 feet of soil. Areas 14, 17, 30, and 76 had some degree of VOC impacts, but only Areas 14 and 30 exhibited evidence of a significant source or release. Area 14 is impacted by elevated concentrations of VOCs, primarily chlorinated hydrocarbon compounds. PCE was detected at concentrations up to 3,100,000 µg/kg (soil matrix) and 3,100 µg/L (soil gas); TCE was detected at concentrations up to 1,200 µg/kg (soil matrix) and 210,000 µg/L (soil gas), and VOC impacts in Area 14 persist throughout the soil/bedrock column and extend beyond a depth of 200 feet (the vertical boundary of the OU). Detectable VOC concentrations also extend beyond a depth of 200 feet in Area 30, but the magnitude of impact is far less severe. Metals concentrations exceeding the maximum Site background levels were encountered in every area sampled. In most cases, the exceedances were not significantly higher than the background levels, and may still represent natural conditions. Furthermore, the exceedances were generally sporadic, without a discernable pattern, represented a small percentage of the samples analyzed, and were not indicative of a specific release or source area. In the few cases where the concentrations appeared to be substantially higher than the background levels (nine locations in Area 14 and five locations in Area 17), and the occurrences were limited in extent.
□ Limited semi-volatile organic compounds (SVOCs), nitramines and nitroaromatics, and phosphorous were detected in some of the soil samples. The extent of these compounds has been generally delineated through the trench and soil boring sampling data.

Depleted uranium (DU) is present in Area 57 due to former firing range operations. Residual DU fragments in soil are in the process of being surveyed and assessed. It is expected that the DU-impacted soil will be addressed as a separate removal action. The East Fork Landfill (Area 17) was reported to have accepted non-hazardous solid waste generated from the Site operations between approximately 1965 and 1986. During the RI, fill was encountered at 23

sample locations and the depth of fill throughout Area 17 ranges from 1 to 36 feet. Based on the RI results, it was estimated that Area 17 contains approximately 66,000 cubic yards of fill material. Trash and debris were encountered in the fill material observed in all of the trenches excavated in Area 17 including: asphalt, metal, wood, plastic, paper, glass bottles, drink cans, food cans, wire, cable, clothing, rope, Styrofoam, cardboard, roots, and brush.

Operable Unit 4

The results of the RI indicated that the soil within certain areas of OU4 has been impacted by perchlorate, VOCs, and metals. Perchlorate impacts were generally limited to the shallow soils in the upper portion of Hula Bowl Canyon I and the stockpiled soils in Area 16A that were excavated from Hula Bowl Canyon IV. Elevated concentrations of VOCs, primarily TCE and other related chlorinated hydrocarbons, were detected in the upper portion of Hula Bowl Canyon I. TCE concentrations in soil gas up to 300 µg/L persisted to the maximum depth sampled (65 feet) and detectable soil-matrix concentrations persisted to a depth of 170 feet. No other significant areas of VOC impact were identified during the RI. Metals concentrations exceeding the maximum Site background levels were encountered in every area sampled. In most cases, the exceedances were not significantly higher than the background levels, and may still represent natural conditions. Furthermore, the exceedances were generally sporadic, without a discernable pattern, represented a small percentage of the samples analyzed, and were not indicative of a specific release or source area. In the few areas where the concentrations appeared to be substantially higher than the background levels, the occurrences were still limited in extent within the main landfill areas of Hula Bowl Canyons I and III, and were consistent with previous investigations. Hula Bowl Canyons I, II, III, and IV (Area 16) were reported all reported to have accepted non-hazardous solid waste generated from the Site operations. Based on the RI results, it was estimated that Hula Bowl Canyon I contains approximately 30,000 cubic yards of fill material; Hula Bowl Canyon II contains approximately 5,000 cubic yards of fill material; and Hula Bowl Canyon III contains approximately 2,500 cubic yards of fill material. Hula Bowl Canyon IV, which was excavated and screened as part of an USACE Technologies Demonstration project, previously contained approximately 8,100 cubic yards of fill material. Approximately 2,800 cubic yards of fill material remains stockpiled at the head of the canyon. Trash and debris were encountered in the fill material observed in Hula Bowl Canyons I, II, and III including: metal, wood, plastic, paper, cans, glass, nails, tires, fire hose, chain link fence, porcelain, Styrofoam, appliances, drums, and other miscellaneous trash items.

Operable Unit 5

The results of the RI indicated that the soil in certain areas of OU5 has been impacted, primarily by perchlorate and VOCs. Areas 2, 12, 13, 33, 46, 50, 51, and 61 had reported perchlorate concentrations exceeding 500 µg/kg, and Areas 13, 33, 46, and 51 had reported perchlorate concentrations exceeding 5,000 µg/kg. In most areas the extent of perchlorate-impacted soil was limited to the upper 40 feet, but detectable concentrations of perchlorate were reported below 40 feet in Area 2 (130 feet), Area 11 (50 feet), and Area 33 (130 feet). Several areas had some degree of VOC impacts. In general, VOC detections were minimal and not indicative of significant sources or releases, with the exception of Areas 2, 33, 45, and 48/49. TCE and PCE were the primary VOCs detected in OU5. PCE had the highest reported concentrations in both soil gas (4,400 µg/L) and soil matrix (4,200 µg/kg) in Area 48/49, but was not detected frequently or at high concentrations outside of Area 48/49. TCE was not detected at concentrations as high as PCE, but was detected frequently, at concentrations up to 300 µg/L (soil gas) and 180 µg/kg (soil matrix). It is significant to note that during previous investigations, several areas within OU5 were reported to have detectable concentrations of

vinyl chloride (VC). However, VC was not detected in soil-gas or soil-matrix samples collected during this RI. In most areas the extent of VOC-impacted soil was limited to the upper 40 feet, but detectable concentrations of VOCs in soil and/or soil gas were reported below a depth of 40 feet in Area 2 (140 feet), Area 20 (50 feet), Area 33 (60 feet), and Area 45 (62 feet). Metals concentrations exceeding the maximum Site background levels were encountered in every area sampled. In most cases, the exceedances were not significantly higher than the background levels, and may still represent natural conditions. Furthermore, the exceedances were generally sporadic, without a discernable pattern, represented a small percentage of the samples analyzed, and were not indicative of a specific release or source area. In the few cases where the concentrations appeared to be substantially higher than the background levels (Areas 8, 11, 20, 21, 24, 38, 41, 47, 50, 51, 60, and 69), the occurrences were limited in extent.

SVOCs were not present in the samples collected from OU5, with the exception of isolated detections in Areas 11, 40, 48, and 60. The only notable SVOC concentration was did-n-butyl phthalate (15,000 µg/kg), which was likely associated with a small area of paint-stained soil. The isolated and relatively low concentrations detected are not indicative of a significant source or release of SVOCs in OU5. Nitramines and nitroaromatics (HMX, RDX, and tartly) were detected sporadically at low concentrations in several areas within OU5. The detections were low, isolated in nature, and not indicative of a significant release or source area. Nitrate concentrations were generally consistent with background levels at the Site. In the cases where nitrate exceeded the Site maximum background concentration, the exceedances were not significantly higher than the background level, and may still represent natural conditions. Phosphorous exceeded the background concentrations established for the Site in several sampling locations within OU5. In general, the exceedances were not significantly higher than the background levels, the distribution of concentrations was relatively consistent and not indicative of a release, and may still represent natural conditions. In the few cases where the concentrations appeared to be substantially higher than the background levels, the occurrences were still limited in extent. A large amount of litho logic data was collected in OU5 during this and prior remedial investigations concerning the vertical and lateral extent of refuse-contaminated fill. The documented industrial waste landfill in Area 2 was fully delineated and encompasses an area approximately 300 feet long, by 150 feet wide, by five feet deep (approximately 8,300 cubic yards). The current investigation uncovered a previously undocumented industrial waste landfill in Area 11 that on rough estimate encompasses an area approximately 600 feet long by 200 feet wide, by five feet deep (22,000 cubic yards). Flare casings (Area 51), cesspools, a fuel tank, and some stained soils were encountered during the RI field work that was removed in subsequent removal actions. Several removal actions were conducted throughout OU5 in 2005 that addressed abandoned septic systems, petroleum hydrocarbon stained soils, flare casings, USTs, and an allegedly red phosphorous impacted area.

Operable Unit 6

OU6, or Area 1, is the only remaining Resource Conservation and Recovery Act (RCRA) unit at the Site. As described under the Section 4.1.2, TCE was detected at concentrations up to 240 µg/kg (soil-matrix) and 2,700 µg/L (soil-gas); and impacts in Area 1 persist throughout the soil column and extend beyond a depth of 200 feet (the vertical boundary of the OU). Previous soil remediation operations for Area 1 included the excavation of between 50,000 and 60,000 cubic yards of soil to a depth of approximately 60 feet, followed by SVE operations from 1988 through 2002, during which approximately 40,000 pounds of VOCs were extracted and treated. Eighty one rounds of quarterly RCRA groundwater monitoring have been performed at this

area which all has shown no chemical impact to Saugus Aquifer directly under the RCRA unit. The remaining issues related to this area will be addressed in a separate closure plan and in compliance with the applicable RCRA requirements.

Chemical Impacts in Perched Groundwater

Perched groundwater has been encountered during the RI in limited areas within OU1, OU2, OU3, and OU5. The perched groundwater generally occurs at the contact between the unconsolidated terrace deposits and the underlying Saugus Formation bedrock, and in the uppermost portion of the Saugus formation (OU3). It is likely that the perched groundwater occurs where the underlying bedrock is less permeable and impedes downward infiltration (fine-grained sandstone, siltstone, and mudstone), and is absent where the underlying bedrock consists of more permeable sandstone that allows downward infiltration. The perched groundwater occurrences are limited laterally and vertically and do not appear to be connected across the Site. The nature and occurrence of perched groundwater within the various OUs is summarized in the following sections.

Operable Unit 1

Perched groundwater was encountered in OU1 in the vicinity of Areas 55 and 26. The perched groundwater in Area 55 was encountered at depths ranging from approximately 29 to 68 feet. The perched groundwater in Area 55 is likely to be heavily influenced by its proximity to the San Gabriel fault. There is currently one perched zone monitoring well in OU1 (Area 26) that is monitored on a quarterly schedule. The depth-to-groundwater measured during the first quarter 2006 was 163.90 feet (1,399.46 feet MSL). The perched groundwater in Area 55 has been impacted by elevated concentrations of perchlorate (up to 39,000 µg/L) and TCE (up to 16,000 µg/L). The perched groundwater in Area 26 has been impacted by elevated concentrations of perchlorate (up to 74,600 µg/L).

Operable Unit 2

Perched groundwater was encountered in OU2 in the vicinity of Areas 1 (also designated as OU6), 1AS, 19, 25, 34, and 74. There are currently 14 perched zone monitoring wells in OU2 that are monitored on a quarterly. The depth-to-groundwater measured during the 1st quarter 2006 ranged from approximately 95.46 to 204.98 feet (1,328.40 to 1,409.92 feet MSL). The perched groundwater in OU2 has been impacted by elevated concentrations of perchlorate (up to 201,000 µg/L) and TCE (up to 16,000 µg/L).

Operable Unit 3

Perched groundwater was encountered in OU3 in the vicinity of Areas 14 and 17. There are currently two perched zone monitoring wells in Area 14 and one well in Area 17 that are monitored on a quarterly basis. The depth-to-groundwater measured during the 1st quarter 2006 in Area 14 ranged from approximately 111.21 to 183.40 feet (1,275.46 to 1,316.09 feet MSL). The depth-to-groundwater measured during the 1st quarter 2006 in Area 17 was 24.72 feet (1,527.70 feet MSL). The perched groundwater in OU3 has been impacted by elevated concentrations of perchlorate (up to 117,000 µg/L) and PCE (up to 120,000 µg/L) in Area 14, and perchlorate (up to 14,100 µg/L) and cis-1,2-DCE (up to 9.2 µg/L) in Area 17.

Operable Unit 5

Perched groundwater was encountered in OU5 in the vicinity of Areas 41 and 50. There is currently one perched zone monitoring well in Area 41 and one well in Area 50 that are

monitored on a quarterly basis. The depth-to-groundwater measured during the 1st quarter 2006 was 31.50 feet (1,239.91 feet MSL) in Area 41 and 32.83 feet (1,234.71 feet MSL) in Area 50. The perched groundwater in OU5 has been impacted by elevated concentrations of perchlorate: up to 245 µg/L in Area 41, and up to 1,150 µg/L in Area 50.

4.3 Munitions and Explosives of Concern

Pursuant to the Imminent and Substantial Endangerment Determination and Order and Remedial Action Order (DTSC, 2002), and to address the potential presence of unexploded ordnance (UXO) or "Munitions and Explosives of concern" (MEC) at the Site, Whittaker Corporation retained EOD Technologies, Inc. (EODT) to provide UXO/MEC avoidance and management support during the RI and construction activities. In addition, EODT has been tasked to provide a Site-wide assessment to determine the scope of the UXO/MEC removal activities and prepare work plans for DTSC review and approval. To accomplish this, EODT has studied the history of the operations and production items manufactured or tested at the Site and prepared the following documents:

- □ Work Plan for UXO/OE Investigation, Clearance, and Construction Support
- □ Historical Site Assessment (HSA) Report, and
- □ Geophysical Prove-out Report.

These documents were submitted to and approved by the DTSC. The purpose of the HSA was to evaluate the historical production-related assembly, testing, and waste management practices at the Site to determine if these practices have resulted in the release of UXO/MEC. The HSA evaluated the potential presence of UXO/MEC throughout the entire Site and determined that only few specific areas presented concerns of possible presence of UXO/MEC. These specific areas have been identified for future UXO/MEC assessment and removal activities. In addition, the results of the geophysical prove-out work conducted at the Site will be used to select the types of the geophysical instruments that are appropriate for detection of MEC under the specific Site conditions. A draft work plan to begin the first phase of the UXO/MEC assessment and removal activities at the Site will be provided to DTSC for review and approval in early 2009. The work plan will include assessment and removal of MEC in specific areas of the site, including the target range (Area 57) and areas around some of the landfills where UXO/MEC are known to be present or are expected to be present

Section 4: Recommendations/Conclusions

Does the site pose an immediate threat and require Removal? The site does pose an immediate threat and requires removal as this site is an active DTSC site.

Have there been any historical releases at the site: Yes, there have been historical release on this property. Perchlorate, VOC's, metals and other contaminants have been found were found in soil and ground water during sampling.

Based on the site reconnaissance and/or regulatory search is there a potential for a release at the site? The site is presently being actively worked on by the DTSC

Summary

Whittaker-Bermite is a former manufacturing facility located on approximately 996 acres in Santa Clarita, Los Angeles County. Residential housing is located to the south and southwest at the boundary of the site. An approximately ten acre portion of the northern border portion of the site has been converted into a commuter rail station. Approximately 12 acres dedicated for Golden Valley Road, has been partially constructed along the eastern portion of the site. The site contained approximately 350 buildings located throughout the site which were used for manufacturing, storage and testing of explosives and administrative purposes. From 1934 until 1987, explosives were manufactured and tested, and off specification items were burned and buried on the site. These included dynamite, practice bombs, flares, fireworks, oil field explosives, igniters, gas generators, ammunition rounds, Kato rockets, and sidewinder and spin rocket motors. Material or mixtures of materials used at the site include lead aside, red phosphorus, barium, zinc, copper, chromium, and chlorinated solvents such as Tetrachloroethylene (PCE) and Trichloroethylene (TCE). Potassium perchlorate and ammonium perchlorate were also used as the oxidizer component of propellant mixtures. The facility was operating under interim status under RCRA and operating fourteen hazardous waste treatment, storage and disco- salinity. In November 1983, Whittaker Bermite filed three letters with DTSC describing the closure activities of these fourteen interim status units. DTSC acknowledged Whittaker's certification of closure for thirteen of the fourteen regulated hazardous waste management units. The one remaining hazardous waste management unit (now operable unit #6), a surface impoundment containing TCE contaminated soil will be cleaned up under the OU2/OU6 RI/FS. In 1987, Whittaker Bermite identified Solid Waste Management Units (SWMUs) to U.S. EPA. In 1992, DTSC executed a search warrant which uncovered paperwork identifying additional potential SWMUs at the site that were not included in the previous reports. In October 1992, Whittaker Corporation submitted a PEA to DTSC for a 10.3 acre parcel of the site containing four SWMUs. This parcel would be used as a commuter rail station by the city of Santa Clarita if the PEA determined that the site did not pose a threat to human health or the environment. DTSC also stipulated that if site conditions differed from those presented in the PEA, then further characterization/remediation would be required. In 1993, a soil investigation by DTSC in the Burn Valley area of the site detected 92,000 mg/kg PCE, 290 mg/kg lead, 36,000 mg/kg copper, 550 mg/kg chromium, 1,300 mg/kg barium. Thirty-two percent of phosphorus was also identified at the New Lead Aside area. On January 11, 1999, the Whittaker Corporation completed the sale of its Bermite facility to Santa Clarita L.L.C. (SCLLC), an affiliated entity of Remedial Financial, Incorporated (RFI). RFI is an Arizona corporation doing business in California. SCLLC is conducting site investigations and required remediations at the Site in order to develop the Site for residential and commercial use. DTSC approved an operable unit (OU) designation for the 996 acre site in April 1999. In designating seven (7) OUs a focused effort is placed on specific areas, migration pathways, and releases in discrete parts of the Site with the emphasis on addressing public health and environmental concerns first along with the needs of the community. The OU boundaries were drawn by drainage basin. OU6 within OU2, is the one remaining RCRA hazardous waste management unit. OU7 is site wide groundwater. OU1 was broken up into sub-OUs to accommodate the community's need for a road leading to a proposed new school site. The extension of Golden Valley Road traverses the northeastern portion of the site for access to the New Golden Valley High School.

During October 1993, in response to a request for information from DTSC, Whittaker submitted a report documenting operations and the potential release of hazardous materials for 64 areas at the Bermite facility in addition to the 14 RCRA units. Based on the data contained in the report, DTSC determined that further study was necessary in areas other than the HWMUs previously investigated to assess whether contaminated soil and groundwater posed a threat to public health and/or the environment. In November 1994, DTSC and Whittaker entered into a Consent Order requiring further investigation and possible remedial action. Exhibit 3 of the consent order lists 77 potential solid waste management units (SWMUs).Santa Clarita LLC (SCLLC) entered a similar enforceable agreement with DTSC after taking over responsibility for Site cleanup in 1999 (Docket No. HAS-A 00/01-174). In November 2002, after it became apparent that SCLLC was not financially capable of complying with the consent order, DTSC issued a unilateral order to Whittaker to resume the Site investigation and remediation work (DTSC, 2002). DTSC is the lead agency overseeing the soil and groundwater remediation program. The Los Angeles Regional Water Quality Control Board (RWQCB) and California Department of Fish and Game are involved with the oversight of the investigation and remediation of the Site drainages and seasonal streams. The RWQCB is the lead agency with respect to the permitting of any wastewater discharges associated with the cleanup of the Site. The South Coast Air Quality Management District is the lead agency with respect to the permitting of any remedial or investigation processes that result in the generation of regulated air pollutants.

Attachment A

SITE SCREENING ASSESSMENT CONTACT REPORT

Site Name: Whittaker Bermite **Site Screener:** Jose Diaz

Contact Name	Affiliation	Telephone Number	Date	Discussion
Eric Lardiere	Vice President & General Counsel	(805) 526-5700	April 2004	Continues as cleanup of the site is ongoing.

Attachment B

SITE EVALUATION MAP AND BACKUP COVER PAGE

Attachment C

SITE SCREENING ASSESSMENT ATTACHMENT INDEX

Site Name: Whittaker Bermite **Site Screener:** Jose Diaz

Attachment #	Document Title	Date	Details of Attachment
1 1	Operable Unit 1 Remedial Investigation Report	5/7/2004	A summary of all previous investigation depicting areas with chemical impacts and baseline risk assessment. (envirostor)
2	Operable Unit 1 Remedial Action Plan	2/3/2005	Proposes remediation methods to address chemical impacts in shallow soils. (envirostor)
3	Site-Wide Remedial Investigation Report for Operable Units 2 through 6	7/7/2006	A summary of all previous investigation depicting shallow soil areas with chemical impacts and baseline risk assessment. (envirostor)
4	Operable Unit 7 Groundwater Remedial Investigation Report	2/14/2007	A summary of all previous investigation on perched groundwater and the regional shallow and deep aquifers impacted primarily by perchlorate and halogenated volatile organic compounds. Report presents chemical fate and transport and numerical groundwater model. (envirostor)